

***People and Their Environment:
Environmental Education and Communication in
Five African Countries***

**GreenCOM
Environmental Education and Communication Project
U.S. Agency for International Development
Contract Nos. PCE-5839-C-00-3068 and PCE-5839-Q-3069-00**

This publication is the product of a collaborative effort between the Bureau for Africa and the Bureau for Global Programs, Field Support, and Research of the U.S. Agency for International Development (USAID). The Africa Bureau's Office of Sustainable Development—specifically the Policy Analysis, Research and Technical Support (PARTS) Project and the Health, Human Resources Analysis for Africa (HHRAA) Project—contributed to this report. Within the Global Bureau, the Center for Environment, Center for Human Capacity Development, and Office for Women in Development contributed to the publication. The findings, conclusions, and recommendations do not necessarily reflect the official viewpoint of USAID.

March 1996

For more information, contact:

GreenCOM
Academy for Educational Development
1255 23rd Street NW
Washington, DC 20037, USA

Tel: (202) 884-8700
Fax: (202) 884-8997
E-mail: greencom@aed.org

The Environmental Education and Communication (GreenCOM) Project is jointly funded and managed by the Center for the Environment, Center for Human Capacity Development, and Office for Women in Development of the Bureau for Global Programs, Field Support, and Research at the United States Agency for International Development and by USAID Regional Bureaus and Missions at collaborating sites. Technical services are provided by the Academy for Educational Development under Contracts No. PCE-5839-C-00-3068-00 and No. PCE-5839-Q-00-3069-00. Subcontractors include Chemonics International, Global Vision, the North American Association for Environmental Education, The Futures Group, Porter/Novelli, PRC Environmental Management, Inc., and the World Resources Institute.

Table of Contents

Foreword	iii
Acknowledgments	iv
Executive Summary	vi
Glossary	viii
1. Introduction to an EE&C Framework for Africa	1
Purpose of This Publication	1
Breadth: Formal, Nonformal, and Informal EE&C Interventions	2
Depth: Applying a Systematic Approach to EE&C Interventions	3
Impact: Potential EE&C Indicators	4
Summary	5
2. Five African Countries in Context	7
Looking at Common Concerns	7
National Policy, NEAPs, and EE&C	8
Summary	10
3. Environmental Education in African Schools	11
Curriculum Development and Teacher Training	11
Instructional Materials Development	14
Extracurricular Programs	15
Summary	16
4. Nonformal EE&C: Approaching Learners on Their Terms	19
Continuing Education Programs for Adults and Out-of-School Youth	19
Extension Education Systems	21
Site-based Interpretation	22
Summary	24
5. EE&C through Informal Settings: Untapped Opportunity	25
Communication Campaigns	26
Folk and Other Indigenous Media	28
Community Mobilization Approaches and Participatory Methods	29
Summary	31
6. Gender and EE&C: Good Intentions, Few Results	33

Applying a Gender Approach	33
Integrating Gender Concerns	34
Summary	35
7. Conclusions and Recommendations	37
Annex A: Guidelines for Assessing an EE&C Intervention	A-1
In-school Curricula	A-1
Pre-service Training Programs	A-4
Annex B: References Cited	B - 1

Foreword

Throughout the environment and development communities, efforts are increasing to combine resources, avoid duplication, and work together. Both financial necessity and program effectiveness dictate this joining of forces. This report, *People and Their Environment: Environmental Education and Communication in Five African Countries*, is the result of such a collaboration within the U.S. Agency for International Development (USAID).

The report looks at how state-of-the-art environmental education and communication (EE&C) can help achieve USAID and host-country environmental objectives. It looks specifically at EE&C efforts and potential in The Gambia, Guinea, Madagascar, Namibia, and Uganda, but many of its conclusions apply elsewhere across the continent.

Two USAID Bureaus were involved in the creation of this report—the Bureau for Africa and the Bureau for Global Programs, Field Support, and Research. These bureaus had already formed an ongoing link through the Africa Environmental Education Working Group, which brings together staff from the Africa Bureau’s Office of Sustainable Development and the Global Bureau’s Center for Environment and Center for Human Capacity Development. Over a period of about eighteen months, the EE Working Group helped shape the five on-the-ground inventories, as well as provided direction for distilling the inventories into one coherent document.

People and Their Environment is being distributed in English and in French to African policy makers, NGO staff, EE&C specialists, and others. Donor-agency and international NGO staff will also receive copies. With dwindling resources, and with resource degradation increasing at an alarming rate, all those committed to Africa’s future must come together to find creative solutions to changing individual and group behaviors towards the environment. We hope that this report will help move the process forward.

David Hales
Deputy Assistant Administrator
Center for Environment
Bureau for Global Programs,
Field Support, and Research

Carol Peasley
Deputy Assistant Administrator
Bureau for Africa

Acknowledgments

People and Their Environment: Environmental Education and Communication in Five African Countries synthesizes rapid assessments of The Gambia, Guinea, Madagascar, Namibia, and Uganda carried out by the Environmental Education and Communication (GreenCOM) Project in 1994. Special thanks go to host-country and USAID professionals in these five countries for providing assistance to the GreenCOM consultants who visited them. In addition, their energy and commitment in carrying out EE&C projects and programs warrant acknowledgment.

Authors of the five country assessments were Irma Allen (The Gambia); Regis Maubrey (Guinea); Richard Grieser (Madagascar); Martha Monroe (Namibia); and R. Ted Field (Uganda).

For their patience, guidance, and essential support to this endeavor, GreenCOM staff thank USAID colleagues Julie Owen-Rea, John Gaudet, Tim Resch and others on the Africa Environmental Education Working Group, as well as GreenCOM Project Officers Anthony Meyer and Kate Barba.

Capturing lessons and themes from the five country reports was a collective effort of GreenCOM team members Paula Tarnapol, Mona Grieser, and Susan Middlestadt; former Project Director Ben Tyson; and consultant Elayne Clift.

Others assisted by reviewing all or part of this document, including Richard Bossi, GreenCOM Operations Support Manager; José Ignacio Mata, GreenCOM's Resident Advisor in El Salvador; William Smith and Renata Seidel of the Academy for Educational Development's Social Development Division; Chris Seubert and Richard Grieser of Global Vision; and Nancy Diamond, Environmental Advisor in the USAID Office of Women in Development. GreenCOM Program Associate Heather Lair also helped with production of this publication.

Executive Summary

In 1994, the Environmental Education and Communication (GreenCOM) Project conducted rapid assessments of environmental education and communication (EE&C) efforts in five African countries: The Gambia, Guinea, Madagascar, Namibia, and Uganda.

People and Their Environment: Environmental Education and Communication in Five African Countries brings together findings from these assessments. This publication, written for those interested in strategies to foster Africa's sustainable development, attempts to:

- 1) synthesize insights about successes and gaps in existing EE&C programs and capacity to execute them;
- 2) place current efforts within a broader EE&C framework to show how integrated and rigorous interventions can help achieve environmental objectives; and
- 3) recommend future directions for EE&C interventions in the countries visited and elsewhere in Africa.

Committed and talented individuals are carrying out innovative and well-received EE&C activities in all five countries and throughout the continent. These range from radio broadcasts in Guinea, to school curricula in The Gambia, to community mobilization efforts in Madagascar, Namibia, and Uganda. However, the assessments revealed that insufficient funding and a lack of understanding about the breadth and depth of effective interventions limit the impact of many of these efforts. As this publication describes, capacity building in key areas is needed to produce and sustain environmental and economic improvement to Africans across the continent.

Section 1 of this publication introduces an organizing framework that challenges many generally held misperceptions about environmental education and communication. It suggests looking at **breadth** in planning and implementing EE&C initiatives: that is, interventions that go beyond **formal** schools to include **nonformal** and **informal** settings. Working definitions of these three settings—formal, nonformal, and informal—are presented on page 3. This first section also advocates **depth**: that is, applying a five-step process (described more fully on Page 3 and in Annex A) that incorporates planning, research, implementation, and monitoring and evaluation into EE&C interventions. Finally, potential **indicators** to measure impact appear on page 4.

Section 2 briefly discusses environmental and social conditions common to all five countries and EE&C policy as reflected in their National Environmental Action Plans. This brief discussion makes clear that EE&C strategies should not take place in a vacuum, but rather should respond to national realities and goals.

Section 3 synthesizes activities in formal, or school-based, settings. Section 3 concludes that despite some individually strong programs, most formal activities suffer from limited pretesting, training, monitoring, and evaluation. Availability of materials for teachers and students is also a major issue. Extracurricular and in-class activities can and must expand to provide school-home and school-community linkages, particularly given the large numbers of youth, especially girls, who do not attend school or drop out prematurely. Most people interviewed for the assessments considered schools the most common setting for EE&C in Africa. Section 3, while acknowledging the importance of formal EE&C interventions in Africa, questions the dominance of school-based settings to meet local, national, or regional needs.

Africa's large numbers of out-of-school youth and non-literate adults create an urgent need for nonformal EE&C interventions, as described in **Section 4**. Taking place in organized groups but outside of schools, nonformal learning occurs within the context of real-life problems and events. Section 4 focuses on three nonformal areas: continuing education programs for adults and out-of-school youth, extension systems, and site-based interpretation. It argues for greater infusion of environmental topics within continuing education programs, focused training in communication and community development skills for extension workers, and strengthening of interpretative programs to make them relevant to the needs and interests of a wide range of visitors and local residents.

EE&C activities in informal settings can achieve specific goals, as described in **Section 5**, yet the assessments concluded that informal interventions are underutilized in Africa, from lack of resources and, in some cases, from lack of acceptance. The communication campaigns around environmental messages examined during the assessment process all aimed for general awareness raising, rather than targeted behavior change. Lessons learned and skills developed in other sectors that have employed informal interventions more fully could be adapted to environmental issues. Section 5 also discusses the potential of folk and indigenous media as powerful EE&C interventions. African performing artists are interested in exploring environmental themes in their work; training of these artists in relevant issues, as has occurred with health topics, would increase their effectiveness. Section 5 also includes a discussion of participatory methodologies as they relate to EE&C.

Although gender issues are addressed throughout this publication, **Section 6** includes some additional comments about the importance, yet admitted difficulty of truly operationalizing gender considerations into EE&C programs. All too often, well-intended projects produce unanticipated implications that worsen women's lives and/or produce no environmental improvement.

The last section of the text, **Section 7**, presents ten conclusions and recommendations about strengthening EE&C interventions in Africa.

To examine existing or potential EE&C activities, program planners, managers, and field practitioners can consider the questions touched on in the first section of this publication, and applied to two interventions—in-school curricula and teacher training—in **Annex A**. While the questions are limited to these two examples, they can adapt to most EE&C activities in formal, nonformal, and informal settings. Finally, **Annex B** lists references used in preparing this synthesis.

Glossary

ANGAP	National Association for the Management of Protected Areas (Madagascar)
DRFN	Desert Research Foundation of Namibia
EAP	Environmental Action Plan (Madagascar)
EE	Environmental education
EE&C	Environmental education and communication
Formal EE&C Covers school-based activities, including curricula and supplementary materials, teacher training, and extracurricular activities delivered through a school setting.	
GEAP	Gambia Environmental Action Plan
GreenCOM	USAID Environmental Education and Communication Project
ICDP	Integrated Conservation and Development Project
Informal EE&C	Covers interventions that are directed to mass audiences and the general public (or a segment thereof), outside of organized groups. These include interventions delivered through mass media, posters, entertainment programs, and the like.
IPN	Institut Pedagogique National (Guinea)
IUCN	The World Conservation Union
JESE	Joint Effort to Save the Environment (Uganda)
LIFE	Living in a Finite Environment Project
MAWRD	Ministry of Agriculture, Water, and Rural Development (Namibia)
MET	Ministry of Environment and Tourism (Namibia)
NARREC	Namibia Animal Rehabilitation, Research, and Education Centre
NBC	Namibian Broadcasting Company
NEA	National Environment Agency (The Gambia)
NEAP	National Environmental Action Plan
NEMA	National Environment Management Agency (Uganda)
NGO	Non-governmental organization

Nonformal EE&C	Covers interventions targeted at an organized group, but outside of a formal school setting, such as extension systems, workplace programs, and adult and out-of-school youth programs.
PAMC	Park Management Action Committee (Uganda)
TIPE	Training and Information Project on the Protection of the Environment
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
WCU	Wildlife Clubs of Uganda
WWF	World Wildlife Fund, World Wide Fund for Nature

1. Introduction to an EE&C Framework for Africa

❖ Purpose of This Publication

❖ Breadth: Formal, Nonformal, and Informal EE&C Settings

❖ Depth: Applying a Systematic EE&C Approach

❖ Impact: Potential EE&C Indicators

❖ Summary

Desertification, deforestation, and water shortages and contamination affect the daily lives of Africans across the continent. These and other problems are exacerbated, often inadvertently, when people burn fields to plant crops, cut fuelwood to cook their food, or migrate to cities to seek employment. But humans also have the creativity and commitment to stabilize, sustain, and improve their environment. Those concerned with Africa's future are using a range of environmental education and communication (EE&C) strategies to modify beliefs, facilitate more positive attitudes, and encourage practices and actions that benefit the environment.

In Namibia, a wildlife expert sees education as key to the long-term survival of wildlife species and habitat. Ugandan performing artists, who have used plays and music in the fight against HIV/AIDS, now also direct their talents toward protecting their country's environment. And in The Gambia, the director of the country's National Environment Agency observed that public participation in an environmental awards scheme was an important step taken to begin the process of achieving the national goal of natural resource conservation.

Unfortunately, despite these and other strong advocates, the overall impact of environmental education and communication efforts in Africa is limited. Capacity building in key areas is in great demand. Stronger linkages among government agencies, non-governmental organizations (NGOs), industry, and communities are needed. More strategic funding of existing and future EE&C efforts is essential to produce both environmental and economic benefits for Africans across the continent.

Purpose of This Publication

In 1994, the Environmental Education and Communication (GreenCOM) Project conducted rapid assessments in five countries: The Gambia, Guinea, Madagascar, Namibia, and Uganda. Four primary areas of inquiry included: 1) the extent and quality of EE&C work underway in each country; 2) the range, quality, and capacity of individuals and organizations involved in EE&C, including government agencies, indigenous and intermediary NGOs, and donor organizations; 3) the capacity of communications agencies to provide services (such as printing, videotaping, formative and evaluation research); and 4) the

degree to which gender is incorporated in the design, implementation, and evaluation of current programs. The assessments also studied USAID's delivery of EE&C services, constraints to achieving EE&C objectives, and ways to strengthen support to all partners

This publication is a synthesis gained from assessments of EE&C efforts in five countries: The Gambia, Guinea, Madagascar, Namibia, and Uganda.

engaged in EE&C programs.¹

This publication, *People and Their Environment: Environmental Education and Communication in Five African Countries*:

- 1) synthesizes insights gained from assessments of EE&C efforts in the five African countries;
- 2) places these efforts within a broader EE&C framework to show how integrated and rigorous interventions can help achieve environmental objectives; and
- 3) recommends future directions for EE&C emphasis in these five countries and elsewhere in Africa.

In addition to contributing to this publication, the individual country inventories were also intended as planning tools for USAID program managers and EE&C practitioners. For example, the Namibia assessment helped members of the Namibian Environmental

¹The individual country assessments are listed in the references in Annex B.

Network chart direction for their fledgling group. The assessment in The Gambia fed directly into drafting a national environmental education strategy. And, in Madagascar, USAID is increasing the role of EE&C efforts in all existing environmental projects, partly as a result of assessment findings.

Breadth: Formal, Nonformal, and Informal EE&C Interventions

Many practitioners interviewed during the assessment process or for other GreenCOM activities underestimate the potential of EE&C. For example, one program manager defined it as the creation of an isolated product, such as a brochure or curriculum. Others expressed the misperception that EE&C approaches only apply to schools, or deal solely with nature themes divorced from economic reality. In fact, as described throughout this publication, EE&C interventions can and should take place at all levels of society, targeted to children and adults, covering the range of relevant topics, and carried out through all possible channels.

This synthesis organizes existing and potential EE&C interventions by setting or delivery system.² **Formal** interventions are those delivered in or through the country's formal school system; they usually focus on the next generation of citizenry and employ long-term approaches to changing behavior. **Nonformal**

²One way educational researchers differentiate among settings is as follows: in formal learning, the institution controls both the objectives and means of learning; in nonformal learning, learners control the objectives but not the means; in informal learning, learners control the means but not the objectives (Heimlich, undated).

EE&C interventions reach people through organized systems other than schools, such as extension systems, unions, literacy programs, or associations of youth, women, farmers, or policy makers. Some of these settings are highly structured, others are not; some involve voluntary participation, others address a “captured” audience. **Informal** EE&C interventions take place outside of organized groups of people. Learners choose to “tune in” or not, for example, to a radio program that is part of a larger communication campaign.

Box 1 provides an illustrative list of interventions in each of these settings in which environmental themes can be promoted. Obviously, target audience, available resources, existing policy, and other factors determine which settings and which interventions fit a given situation.

Depth: Applying a Systematic Approach to EE&C Interventions

Considering a range of EE&C interventions across all settings is important, but not enough. The assessments found that program managers often limit their evaluation of an EE&C intervention to the fact that a program was implemented or product was developed. Missing is a critical examination of the program’s qualities, the processes by which it was developed, or its actual impact in changing behavior. By not scrutinizing all elements of an intervention, managers shortchange the contribution of EE&C strategies to help achieve overall objectives. EE&C programs should include planning and research, implementation, and monitoring and evaluation.

Box 1 EE&C Interventions

Formal Settings

- In-school curricula
- Materials development
- Pre-service teacher training
- In-service teacher training
- Extracurricular activities

Nonformal Settings

- Adult and out-of-school youth education programs
- Extension services/systems
- Work site programs
- Site-based interpretation efforts
- Voluntary associations programs
- Church or other religious activities

Informal Settings

- Communication campaigns
- Folk and other indigenous media
- Community mobilization efforts
- Electronic media
- Media advocacy

The development and implementation of EE&C interventions is fundamentally a strategic process. Interventions described in the assessments were reviewed against the steps described in Box 2. What research and planning went into the formulation of the activity? To what extent has the intervention proceeded as planned? To what degree has the program been monitored to fine-tune and revise it? And, finally, has evaluation taken place to document successes and failures to benefit future activity? The assessments found that, in particular, steps 3 and 5 were often missed. Annex A presents a more extensive list of questions, applied to two interventions:

school-based curricula and pre-service teacher-training programs.

Impact: Potential EE&C Indicators

Finally, what indicators can program managers use to measure the success of the EE&C

Box 2 **Five steps of an EE&C intervention**

1. **Assessment** of the existing situation against priority environmental and development issues and long-range objectives
2. **Planning** and design process that engages all stakeholders
3. **Pretesting and revision** of prototype programs, messages, and materials
4. **Implementation**
5. **Monitoring, revision, and evaluation** of the intervention by concerned stakeholders

The first three steps constitute **planning and research** needed for a successful intervention before actual **implementation**, followed by **monitoring and evaluation**.

components of their projects? No systematic or universal set of indicators yet exists to measure EE&C efforts in Africa or elsewhere, although efforts to develop indicators for specific EE&C situations are beginning. Applying lessons from the broader

communication field to the environment could lead managers to consider their program in light of the following:

- ❖ To what degree and how was the target audience covered by the education or communication channel used?
- ❖ What percentage of the target audience was actually exposed to the messages or information, with what frequency, and over what period of time?
- ❖ What percentage of the target audience can remember seeing or hearing the information, and what do they remember about its learning content?
- ❖ Depending on the objective of the intervention, what percentage of the audience had changes in attitudes, beliefs, knowledge, skills, and/or behaviors—and what was the change?
- ❖ Other indicators that managers may look at include the percentage of the target audience that discussed the message with others, or the percentage who felt that their families, neighbors, or others would support the adoption of new, more environmentally positive behaviors.

Summary

- ❖ Environmental education and communication (EE&C) strategies are helping to solve Africa’s environmental problems, but they are greatly underutilized.
- ❖ Depending on target audience, resources, and goals, program managers need to consider breadth: that is, EE&C interventions that take place outside of formal settings and also consider those in nonformal and informal settings.
- ❖ Depth is essential to ensure quality so that EE&C programs can deliver on their promises. An EE&C intervention should consist of planning and research, implementation, and monitoring and evaluation—not just the implementation phase.
- ❖ Establishment of indicators to measure the impact of an EE&C intervention is nascent in Africa. Nonetheless, coverage, exposure, awareness, and changes in audience attitudes, knowledge, skills, and behavior can provide useful information about program success.

“What is important for practitioners to keep in mind is that this is NOT a subject, but a process which takes place over a long period of time, across a wide range of subjects and experiences.”

Gambian educator

2. Five African Countries in Context

- ❖ *Looking at Common Concerns*
- ❖ *National Policy, NEAPS, and EE&C*
- ❖ *Summary*

Looking at Common Concerns

The five countries studied span east, west, and southern Africa. Namibia is one of the largest on the continent; The Gambia, the smallest. Uganda does not border an ocean; Madagascar is an island. Guinea is marked by watersheds, while Namibia is the most arid country in sub-Saharan Africa.

Human pressure combined with natural disaster can exacerbate and accelerate environmental and economic distress.

Despite these and other differences, however, they have much in common. All five face major environmental problems such as soil erosion, loss of biodiversity, and pollution. Their people struggle to survive in depressed, agriculturally-based economies. Each country has special natural resource attractions, which hold potential for emerging ecotourism markets. Human pressure combined with natural disaster (hurricanes in the case of Madagascar and drought in Namibia) can exacerbate and accelerate environmental and economic distress.

The countries also share some commonalities. Population rates are uniformly high. Ethnic diversity and a plurality of languages create challenges in communications at national and

even regional levels. Each country is struggling with governmental reforms that affect many social institutions, including political and educational systems. Low literacy rates, particularly for women, complicate audience access and have profound implications on the effectiveness of environmental education. With more than half the population in these countries under age 20, the need is great to expand programs that effectively reach youth, including the high percentage who do not attend school.

While environmental legislation exists in each country, enforcement mechanisms are weak and national resources for environmental education and communication are limited. Leaders in each country recognize that women play a crucial role as natural resource managers, yet political and social systems generally exclude women from decision making.

Authors of the assessments observed a lack of standards for EE&C efforts.

Although public agencies, NGOs, and concerned individuals carry out diverse and often innovative EE&C efforts, the priority given to EE&C is consistently low. Funding levels and the basic capacity to carry out EE&C interventions are minimal. An understanding of EE&C methods and elements

varies widely among development

practitioners, educators, and others. Despite these weaknesses, each country has a cadre of dedicated, talented individuals and groups who are striving to carry the field forward. Decision makers could fulfill this potential by giving greater priority to EE&C programs, through such means as policy articulation and follow-through, attention at top levels of government, sufficient funding, and capacity building.

National Policy, NEAPs, and EE&C

Each of the five countries has taken a major step forward in shaping its national environment policy in the form of a National Environmental Action Plan. (Guinea's is currently under development.) Moreover, each national government has articulated a role for education and communication within its plan.

National Environmental Action Plans (NEAPs) provide the overall policy context within which environmental education and communication strategies develop. NEAPs can mobilize national participation towards environmental goals, convince people of the urgency of addressing environmental degradation, build national consensus, and strengthen national capacity (Falloux, Talbot, and Larson, 1991). USAID and other local and international organizations can tie their strategic objectives to some or all of the goals expressed in the NEAP. However, while the NEAPs generally express strong interest in environmental education and communication across sectors, countries have barely translated this language into actual programs or budget appropriations. Many factors, including financial constraints, competing priorities, and insufficient donor support, account for this gap.

NEAPs provide the overall policy context within which environmental education and communication strategies develop.

In **The Gambia**, the 1977 Banjul Declaration expressed the first national commitment to protect the environment. In 1992 the government developed a ten-year NEAP, which created the National Environmental Agency (NEA), charged with coordinating implementation of The Gambia's Environmental Action Plan, or GEAP. Within the GEAP, EE&C is identified as one of three necessary cross-sectoral programs to achieve the success of other program goals. NEA has

Environmental initiatives enacted under a democratic system require the tacit approval and participation of informed citizens.

Madagascar developed the Malagasy Strategy for Conservation and Sustainable Development, one of the first such strategies in Africa, in 1984. It led to the Environmental Action Plan (EAP), formalized in 1990 to implement the Strategy, which aims to "assist the Malagasy population in protecting and improving its environment while working for sustainable development." The EAP has six long-term programs, including "promoting environmental education, training, and communication." Over the past few years, however, economic hardship has deepened and a new democratically elected government, whose leaders have no stake or involvement in previous policies, has emerged after a socialist

three primary EE&C objectives: increased public awareness and participation in environmental concerns; integration of EE&C material into schools and other educational institutions; and heightened environmental awareness and responsiveness of government staff, decision makers, community leaders, and other key individuals. By using every possible channel and setting to raise environmental sensitivity and awareness, NEA expects that increased citizen motivation and action will follow. USAID/Banjul's objectives mirror this broad interpretation by making environmental education and communication a key component of environment, health, and governance programs.

regime. These factors have led to a "backlash" among some policy makers who see heavy donor investment in the environment as ignoring other pressing social issues. Such a reaction increases the need for EE&C, since environmental initiatives enacted under a democratic system require the tacit approval and participation of informed citizens. This, in turn, calls for creation of a constituency among policy makers and the general population who understand the link between environmental quality and economic development. Although donors have invested heavily in environment-related projects in Madagascar, EE&C funding has been a small percentage of the total. USAID/Antananarivo's goal is for EE&C strategies that support existing projects.

Namibia's "Green Plan" was a product of independence. It commits the new government to "encouraging environmental awareness and education initiatives," and states that Namibia's goal is "to develop an

environmentally literate society in which citizens have the knowledge, skills, and values necessary for appropriate action.” The new national constitution promises that “the state shall actively promote and maintain the welfare of the people by adopting...policies aimed at...the maintenance of ecosystems, essential ecological processes and biological diversity in Namibia, and utilization of natural resources on a sustainable basis for the benefit of all Namibians, both present and future.” The government views EE&C as necessary across sectors and programs and underscores the importance of participation for planning and implementation. Donors have supported individual EE&C projects, but often have not coordinated priorities or funding patterns. USAID/Windhoek is taking a lead role in supporting a consortium of indigenous NGOs in its coordination of national EE&C strategy.

Uganda has only recently moved beyond a devastating civil war and is still developing its national constitution. Decentralization and educational reform are under way, and the recently completed NEAP has resulted in formation of the National Environmental Management Agency (NEMA). Uganda has established several new national parks, and local and international NGOs are increasingly involved in natural resource management. Recommendations of the Government White Paper on the Education Policy Review call for the educational system to help develop environmental awareness and concern. The NEAP proposals and Uganda’s draft

constitution also state that without public awareness and environmental education, efforts to protect the environment will not succeed. The Ministry of Education is beginning to incorporate environmental education into school curricula, but planners also realize that traditional institutions (such as chiefdoms) and traditional methods (such as folk media) are important components of future EE&C efforts. Uganda is a country at the threshold of EE&C’s potential to motivate and mobilize its people to care for their immediate surroundings in a sustainable manner. USAID/Kampala has expressed an interest in supporting nonformal strategies, particularly in extension systems around National Parks.

Guinea is still completing its NEAP through a partnership between the government and NGOs. So far, little in the draft NEAP discusses a role for education and communication, despite the existence of a great deal of effort and potential within the country. Coordination and perseverance will hopefully ensure inclusion of effective EE&C strategies within Guinea’s NEAP. USAID/Conakry’s environment and education programs span natural resource, health, and population sectors, making use of extension and rural radio systems, among other methods.

Summary

- ❖ **Environmental and social conditions link The Gambia, Guinea, Madagascar, Namibia, and Uganda, which make comparisons of EE&C approaches relevant.**

- ❖ Each country's NEAP includes at least some articulation of the importance of environmental education and communication.
- ❖ These policies have not translated into sufficient funding or serious attention.

“One of the easiest mistakes to make is rushing to action before the people are aware that a problem exists.”

Namibian rural development specialist

3. Environmental Education in African Schools

❖ Curriculum Development and Teacher Training

❖ Instructional Materials Development

❖ Extracurricular Activities

❖ Summary

Many individuals in the five countries identified environmental education (EE) in formal school settings as the principal EE&C activity taking place in Africa. This may simply be due to the fact that schools represent an organized place to begin. It might also stem from an early recommendation of the United Nations Environment Programme (UNEP) that education programs be used to foster environmental literacy. In addition, as noted earlier, some assume incorrectly that schools are the only place where environmental teaching can take place. In any event, these school-based programs stand out among African environmental education and communication efforts. However, in certain countries, scarce resources and competing demands make focus on the formal system a less logical response to short-term critical needs. Further, since access to formal education differs by gender, it is important to ask whether both boys and girls are reached effectively by school-focused environmental education and communication interventions.

Limited resources affect the ability to which systematic EE&C processes, as outlined in Box 2 (page 4), are carried out. Assessments found a concentration on in-class curricula,

rather than on linkages between school lessons and home and community environmental priorities, on extracurricular activities, or on teacher training. Pretesting to determine the appropriateness of EE curricula and pedagogical methods rarely takes place. Pre-service and in-service training, which enhance teachers' ability in specific subjects and their overall self-esteem and skills, are not yet institutionalized. Few evaluations exist to gauge whether gains in learning have taken place or whether environmental education changed attitudes or behavior. Strengthening these weaknesses would enable educators to deliver stronger, more integrated programs to their students.

Curriculum Development and Teacher Training

Among the five countries studied, primary and secondary EE curricula are best established in The Gambia and Namibia.

Environmental curricula can follow two approaches: "infusion," in which environmental issues are dealt with throughout

the total curriculum in diverse subjects, and the “block” method, in which distinct environmental courses are created (Braus and Wood, 1993). Either method can be mandatory (that is, students are tested and achievement is linked to academic progress), or consist of supplementary materials used at the discretion of the teacher. Examples of this latter approach include comic books or student and teacher instructional materials provided by UNEP for schools in many African countries.

Among the five countries studied, mandated primary and secondary environmental curricula are best established in The Gambia and Namibia. Both countries employ a combination of infusion and block methods. Prior to Namibian independence, the exiled Southwest Africa People’s Organization (foundation of the present government) received Danish assistance to develop curricula that emphasized agriculture and sustainable use of natural resources. These early efforts helped jump-start a recent and more thorough curriculum reform process. Now, environmental issues are infused in grades 4-7 Science and Health curriculum; in grades 8-10 Life Science curriculum dealing with health, biology, ecology, and agriculture; and in the senior secondary Natural Economy curriculum, which looks at regional and global issues and is geared for students who will sit for the Cambridge exams.

The entire Namibian pre-service teacher training program is undergoing reform, with a new emphasis on cross-curricular activities, cooperative learning, reflection, critical thinking, and questioning skills. Upgrading the skills of teachers with only a grade ten or twelve education has also begun. If both the

pre-service and in-service training progress as planned, Namibian teachers will gain the skills and self-esteem to disseminate ideas, motivate others, and become credible opinion leaders in their communities.

In The Gambia, the Ministry of Education has developed a Social and Environmental Studies curriculum as one of four block areas of the academic curriculum (along with English, Mathematics, and Science). The curriculum uses a spiral approach, with simple concepts taught at lower levels and increasingly complex ones at subsequent levels. Short orientation workshops train teachers in the curriculum, although most judge this training as insufficient. Syllabi for grades 1-9 have been developed, and books are partially completed (See Box 3).

Uganda and Madagascar are in the midst of national curriculum reform processes. In Uganda, civil conflict led to a collapse of the educational infrastructure, which is slowly undergoing reconstruction. Present efforts concentrate on primary-level curricula. There is an Environmental Education Coordinator within the Ministry of Education, but the position has limited authority and resources. At the time of the assessment, it was unclear to what extent and with which method environmental topics would be covered in the curricula, although many teachers and administrators clearly expressed the urgency of infusing environmental issues.

In the meantime, many innovative teachers, students, and teacher-trainers have begun to develop EE&C topics and methodologies on their own. For example, teachers affiliated with the Institute for Teachers’ Education at Kyambogo (ITEK) have taken it upon themselves to write an environmental

education curriculum that connects to the current national syllabus. Two years ago, ITEK students, who are all current and prospective teachers, formed the Kyambogo Environmental Management Association, which now has two hundred members.

In Madagascar, the government has launched a broad educational reform process and hopes to have a new secondary school curriculum in place by 1996 and a new primary curriculum by 2000. These curricula use infusion methods to include environmental concepts in other subject areas. The secondary-school curriculum has already been developed and the government is pretesting it in a number of schools. However, at the time of the assessment, no funding was committed to the reproduction and dissemination of materials, and no plans were in place for teacher training. The new curricula are in French, the language the government recently adopted as its official language for education.

In the late 1980s, World Wildlife Fund (WWF) developed a Malagasy-language curriculum, which it distributed to schools in and around Integrated Conservation and Development Project (ICDP) areas that it manages. The materials were also made available to schools in other ICDPs and in urban areas. Interestingly, Ministry officials have complained that because of excessive donor interest in the subject, the environment plays a disproportionate role in school instruction in ICDP areas. Indeed, although still not reaching every student and teacher, environmental education has had greater diffusion of instructional materials and more in-service teacher training sessions than have most other subjects taught in ICDP-area schools. Madagascar's new French-language

educational program will supplant this WWF curriculum.

Box 3

EE Curriculum in The Gambia

Social and Environmental Studies is one of four main components of The Gambia's curriculum, along with Science, Math, and English. Below, curriculum development is described by the steps listed in Box 2, page 4.

Planning and Research

- A panel of eight education specialists developed materials. Although none had an environmental background, they did infuse environmental topics into the social studies curriculum. Infusion into the other three components was limited.
- No pretesting, piloting, or revision of materials took place. However, teachers are asked to comment as they use them.
- Syllabi have been produced for grades 1-9; at the time of the assessment, texts and guides were available for grades 1-4.
- In early grades, curricula reach boys and girls equally, but, by grade 6, only 20% of students are female.

Implementation

- Short orientation workshops for teachers were held in each of four regional centers. The Ministry also has training, but, at the time of the assessment, had no Environmental Studies specialists.
- There are not enough texts and A/V aids.
- No coordination with other materials, such as TIPE materials prepared for the Sahel.

Monitoring and Evaluation

- None was planned at time of assessment..

In Guinea, the Institut Pédagogique National (IPN) is primarily responsible for developing curricula and producing instructional materials. To date, IPN staff have piloted an environmental education course as part of a pre-service program funded by UNESCO, prepared a block-method guide for secondary school teachers, and developed, with UNICEF funding, a pilot program in urban schools in five experimental areas that focuses on garbage cleanup and sanitation, creation and maintenance of parks, and awareness raising. In addition, Guinea's fledgling program is experimenting with linking the use of comic books to the curriculum and is also formulating an Action Plan for training of trainers in environmental education. NGOs have some creative programs under way, such as a videomobile that travels on a regular basis to about eight schools in the capital.

EE curricula can serve as vehicles to stimulate interactive teaching methods, making environmental studies more participatory and providing teachers with new ways to teach. A few institutions attempt this. An objective of the program in The Gambia is to train teachers to make their own EE materials. As mentioned above, Namibia hopes to instill

EE&C curricula can serve as vehicles to stimulate interactive teaching methods.

these interactive teaching skills through enhanced training. And Guinea intends to construct a Center for Action Research in Environmental Education. This center will serve as the country's first teachers college on the subject; it will also train rural researchers

and others in participatory rural appraisal research methodology.

Instructional Materials Development

NGOs and Ministries of Education collaborate on the development and production of instructional materials in The Gambia and Namibia. In The Gambia, the Ministry Book Production and Materials Resource Unit, a modern and well-equipped facility, services all grade levels. The non-governmental Chimp Rehabilitation Project produces activity booklets for fourth- and fifth-grade students in villages that border the River Gambia Park. Supplementary resources used by a limited number of teachers nationwide include fourth- and fifth-grade activity booklets and teacher guides produced for nine Sahelian countries by the Training and Information on the Protection of the Environment (TIPE) Project. As a general rule, materials go untested and unevaluated.

Availability of EE materials is a critical issue in The Gambia, and in all countries studied. The U.S. Peace Corps is setting up multimedia educational resource centers to collect and disseminate EE materials, which will partially remedy this crucial gap. The fact remains, however, that across the continent, teachers and students have difficulty obtaining books, audiovisual resources, and other instructional materials. In addition, they need videos and other visuals that depict local problems and local solutions.

Public/private collaboration is also prevalent in Namibia, where the Ministry of Education maintains general resource centers. The Cheetah Conservation Fund; Desert Research Foundation of Namibia (DRFN); Namibia

Animal Rehabilitation, Research, and Education Centre; and other NGOs have all assisted in instructional materials development. DRFN is preparing a series of five resource books, each designed for a different grade level, about the country's most crucial environmental problems. About 225 pages each, the books contain background information, clever graphics, and activity ideas. Smaller booklets cover specific topics. The first three books (on water, energy, and population) were being field tested in twenty-four schools at the time of the GreenCOM assessment. After revisions, DRFN will turn the materials over to the Ministry of Education; the two entities are discussing dissemination plans that include integrating the materials into all basic teacher training.

In Madagascar, supplemental instructional materials available for schools include *Vintsy* magazine, produced by WWF as an all-purpose environmental magazine with games, stories, poetry, science articles, and a teacher's supplement. WWF provides copies of the magazine to schools in its ICDP areas. Newsstands in urban areas also sell copies (see Box 4).

Across all five countries, lack of adequate facilities often means that producing printed materials is difficult. More desktop-publishing systems would greatly aid pretesting and revision during the materials development process. Additional printing presses and audiovisual production equipment would also make these materials more accessible to African students.

Extracurricular Programs

Extracurricular programs—those that take place through schools but outside of the classroom—develop greater interest among young people in environmental matters. Generally held after school, these programs include clubs, outings, and overnight camping

Box 4

Madagascar's *Vintsy* Magazine

World Wildlife Fund's best-known activity in Madagascar is *Vintsy* magazine. Initially produced for secondary school students, it now has a larger readership among the general population. Below is a summary of magazine development, based on the steps listed in Box 2, page 4.

Planning and Research

- No formal research or pretesting took place. Through discussions at schools, WWF staff determined that games and stories are the most popular sections.

Implementation

- Vintsy* is distributed in WWF ICDP areas and sold at newsstands in urban areas.
- The Swiss government subsidizes production to keep the price down.

Monitoring and Evaluation

- No systematic monitoring or evaluation has taken place. Anecdotal evidence indicates the magazine's popularity. Actual readership is unknown, because copies are passed from person to person.

trips that can intensify the environmental education experience and help formal education programs influence individual and community behavior.

In the five countries assessed, several innovative EE&C activities took school children outside of the classroom. Some schools organize clubs (around such themes as “conservation,” “ecology,” or “environment”), a few of which undertake outdoor excursions.

However, these outings are often brief and viewed by students more as holidays than nature-study experiences. In addition, organized outdoor activities are often limited to children from elite, urban schools and therefore serve a very small population.

Although not all are tied to schools, the Wildlife Clubs of Uganda (WCU) sponsor perhaps the best-known conservation clubs in the five countries. WCU counts one thousand clubs on paper, although only 130 are considered active. Founded in 1975 to teach young people about wildlife, WCU’s emphasis has broadened to the study and understanding of ecosystems. An eight-person staff coordinates club activities nationwide, raises funds, and builds partnerships with public and private organizations. This secretariat and infrastructure are resources that few extracurricular organizations in Africa enjoy.

Wildlife clubs are envisioned as part of the Kiang West National Park Integrated Conservation and Development Project in The

Gambia; however, at the time of the assessment, no particular agency was fostering or encouraging club formation. In Madagascar, WWF employs a trained interpreter to operate a camping/outing trip for high school students. Participation is exceedingly competitive; the program accepts only fifteen teenagers each year. The Madagascar assessment learned about several extracurricular clubs—all organized by charismatic teachers at private schools. While these clubs receive no operational support from WWF, they do receive technical guidance.

In Namibia, Coca Cola joins with the Ministry of Education to sponsor Conservo, an annual environmental project competition. Fifty-seven schools nationwide participated in 1994. Teams of three to six students identify and investigate a local environmental issue. Younger students submit a poster that illustrates their chosen project; older students prepare a more rigorous description of their investigation. Workshops have been held so that teachers can better guide and instruct students. Planners are considering holding future competitions at regional levels in the future, rather than conducting only one national contest.

Summary of Formal EE&C Interventions in Africa

- ❖ **Those interviewed for the assessments identified the formal school system as the setting where most EE&C interventions in Africa take place.**
- ❖ **Scarce resources limit pretesting, training, monitoring, and evaluation—all of which are essential so that educators can deliver stronger programs to students.**

- ❖ Availability of materials is an issue, remedied in part by resource centers and improved printing and distribution facilities.
- ❖ Extracurricular activities, along with those in the classroom, can and must expand linkages to the home and community for maximum impact of environmental messages. Club leaders often make the difference between clubs that exist only on paper, and those that engage in meaningful activity.

“EE&C requires a new way of thinking. Teachers need to learn how to approach their subjects in an interdisciplinary way across the curriculum. They also need to learn to use resources at hand, no matter how modest.”

Ugandan curriculum specialist

4. Nonformal EE&C: Approaching Learners on Their Terms

- ❖ *Continuing education*
- ❖ *Extension*
- ❖ *Site-based interpretation*
- ❖ *Summary*

Nonformal approaches to education represent a change in process as well as in setting—from top-down methods to more bottom-up, participatory ones. Learning occurs within the context of real-life problems and events. Properly designed, nonformal EE&C interventions have obvious relevance in the African context, and authors of the assessments talked with practitioners carrying out many intriguing programs

Nonformal approaches reach diverse groups whose expressed interest for coming together may not be the environment but with whom it is important to share an environmental message. Different nonformal settings require different kinds of programs. For example, training new agricultural extension workers to employ EE&C methodologies in the field requires more structured information delivery than that which is appropriate for looser, more voluntary groups of farmers, women, or youth.

Box 1 (page 3) lists many potential nonformal EE&C interventions including programming with women's groups, at factories or other work sites, and through church or other religious programs. This synthesis focuses on three: education programs for adult and out-of-school youth, extension, and site-based interpretation.

Continuing Education Programs for

Adults and Out-of-School Youth

Because of the high numbers of out-of-school youth in the five countries studied, nonformal interventions in the form of continuing education are extremely important.

Continuing education programs for adults and out-of-school youth are natural vehicles for EE&C themes. Literacy education can cover a range of environmental topics, from composting to water use. Health education programs frequently bring in environmental concerns. Vocational education programs for agricultural workers can cover natural resources management, pesticide use, and other environmental issues. Less obvious but still important, training for automobile repair mechanics, construction workers, and others can explain how the particular occupation affects the environment. Because of the high numbers of out-of-school youth in the five countries, such education programs are extremely important.

Few countries take full advantage of this potential, although isolated examples exist. For example, The Gambia Technical Training Institute has planned a bird-guide training

course to support an emerging ecotourism market. And three international NGOs active in The Gambia (Action AID, Catholic Relief Services, and Save the Children) provide literacy, health, and vocational training workshops that touch on environmental themes within their community development programs. In the public sector, the Ministry of Education's Department of Nonformal Education conducts a literacy education program to which environmental concerns could be added.

In Namibia, the Ministry of Education's Department of Adult and Continuing Education conducts a well-designed national literacy program that unfolds in three stages: basic reading and writing skill-building in learners' indigenous languages, more advanced subjects in these languages, and functional literacy instruction in English. District literacy officers teach and oversee the work of local literacy promoters, who in turn conduct classes for community members. Support for environmental issues is one of ten stated aims of the program (see Box 5), and participation is high. In the private sector, the Rossing Foundation and the Nyae-Nyae Foundation offer literacy, health, and vocational training that touch on environmental topics.

Overall, instructional materials used in existing programs often go untested and unevaluated in the five countries. Because of the idiosyncratic nature of message development by individual institutions and the lack of coordination among these institutions across the various forms of continuing education, there is also a risk of conveying conflicting messages. And, across all five countries studied, access for females, particularly for young, out-of-school adolescent girls, is

Box 5

Namibia's Adult Literacy Program

Development of environmental awareness is one of ten goals of Namibia's basic education program. Below, a summary of the program is organized by steps listed in Box 2.

Planning and Research

- Designed in 3 stages: Stage 1 teaches basic literacy in 11 indigenous languages; Stage 2 uses indigenous languages at more advanced level; Stage 3 teaches functional English. All stages contain environmental content.
- No formal research or pretesting took place. Staff with overall responsibility have graduate training in adult education or related area.
- Promoters receive 3-week pre-service training.

Implementation

- Widespread: in 1993, more than 30,000 learners and 1,700 promoters participated. There is a high percentage of female learners and promoters.
- Although teacher guides encourage interaction, many promoters do not feel comfortable with this approach, and there are insufficient resources for much in-service training to help them.

Monitoring and Evaluation

- No monitoring or evaluation took place, although staff welcomes feedback.

seriously deficit. Special efforts are needed to tailor programs to accommodate time constraints in women's lives and to sensitize program managers and practitioners to the importance of including girls and women in nonformal education offerings.

Extension Education Systems

Programs in extension education systems generally work through governmental or, on occasion, private agencies, to reach organized groups of farmers, fuelwood collectors, or other types of natural-resource users. Environment-related extension systems include park rangers, foresters, agricultural specialists, interpretative guides, and health workers. Often, an extension worker serves as the first, or indeed only, contact between natural resource users and the “official systems” responsible for these resources. In Africa, with its high percentage of rural inhabitants who rely directly on the land, extension should be an important component of any national EE&C strategy.

Extension was historically based in the public sector—particularly, in a country’s Ministry of Agriculture. Support systems are comprised of research, education, and field-based departments. Increasingly, environmental issues are dealt with by delivery systems in other ministries and departments, including conservation, forestry, rural development, tourism, and health. These ministries often operate through a similar type of system of training and support for field workers who reach out into communities. Rarely, however, do they coordinate efforts or EE&C messages. In Namibia, the assessment found extension networks run by two ministries: the Ministry of Environment and Tourism (MET) and the Ministry of Agriculture, Water, and Rural Development (MAWRD). At least at the central level, the two systems rarely communicated and certainly did not coordinate programs and resources.

The agent in an effective extension system

requires both technical and process skills in EE&C. He or she must not only know a wide

The agent in an effective extension system requires both technical and process skills in EE&C.

range of technical subjects, but also must be able to communicate this information effectively. Extension workers attached to the Ministry of Agriculture in The Gambia learn about soil conservation, land use and development, animal care, cultivation, pesticides, horticulture, and food production and preservation techniques, among other topics, during a two-year general agriculture course at Gambia College and occasional in-service training.

Transmitting this array of topics to target groups calls for extension workers to develop new communication and community organization skills. In all five countries, roles of foresters, park rangers, and other natural resource extension agents have evolved in recent years to encompass community-based approaches. They find themselves increasingly serving as facilitators, although their training has been oriented toward regulation and enforcement. This is particularly true for extension workers selected from and operating within their own communities.

In Guinea and to some extent in all other countries studied, lack of transportation infrastructure and vehicles hampers extension work. This often translates into loss of motivation among extension agents, and into difficulty encouraging follow-up activities and

evaluations. Another constraint is the high ratio of resource user to extension worker. In Namibia, two hundred MAWRD field staff cover the entire country. Many feel they can only respond to requests, rather than initiate new programs in a proactive manner.

NGOs also promote environmental themes through extension education. In Uganda, CARE, JESE (Joint Effort to Save the Environment), and other organizations work with resource users, particularly in buffer zone communities. In Madagascar, each ICDP essentially operates its own extension system of park rangers and guides, community development specialists, and other providers of ancillary services. In the area around Ranomafana Park, a team provides health services, bypassing government clinics.

As with other EE&C interventions, a population's or community's perspectives—particularly regarding economic realities—must be paramount. For example, one forester in The Gambia noted that many people he deals with feel that firewood doesn't need to be grown as a crop; rather, it can just be cut and used. He recommended development and evaluation of practical strategies that emphasize the economic benefits of tree plantations.

Scarcity of female extension agents in Africa is widespread, thereby limiting the ability of programs to target women effectively in their communities, perform research that will identify women's needs, or develop gender-responsive programs. Culture, socialization, and field logistics (such as a scarcity of appropriate housing and other facilities) often prevent women from taking posts in remote areas. No innovative programs to train local

women as extension workers were identified.

Extension education in the five countries would improve with:

- ❖ better targeting of EE&C efforts and messages for specific audiences;
- ❖ increased coordination among various extension agencies and networks;
- ❖ institutionalized training in communications and community development skills for extension workers; and
- ❖ experimentation with models that allow for greater participation by women as extension agents and that focus on women's direct involvement with the environment in their local areas.

Site-based Interpretation

“Site-based interpretation” refers to environmental education and communication provided in places that people visit voluntarily such as zoos, nature centers, museums and park exhibits. Site-based interpretation also refers to programs that communicate the value of a protected area or other site to off-site communities or other audiences. Freeman Tilden, an early expert in the field, defined interpretive education as a way “to reveal meaning and relationships through the use of original objects by first-hand experience and by illustrative media rather than simply to communicate factual information.” Visitors to interpretative centers have special characteristics that should be identified to design EE&C programs that can change

knowledge, attitudes, beliefs, and practices. As “non-captive audiences,” visitors are usually there of their own volition, expect an informal atmosphere and a nonacademic approach, and simply switch their attention (or leave) if they are bored or uninterested in the information presented (Ham, 1992).

Environmental interpretation takes place in all five countries assessed, particularly Namibia and Uganda. Sites range from urban zoos to remote wildlife centers. In many cases, interpretative centers are located in or near protected areas and attract visitors with different needs: local community members who depend on the areas for medicinal plants, religious purposes, or other reasons; school groups who participate in experiential learning opportunities; and foreign tourists who seek an exotic, pristine environment. Scarcity of materials, inability to update signage, and lack of pretesting and evaluation when new programs or exhibits are developed were among the limitations noted in the examples studied.

National museums and parks in capital cities help reach urban audiences. These centers provide an educational overview of regional flora and fauna; descriptions of the country’s geography, topography, and geology; and other exhibits. Several museums have parks or nature trails located nearby, so that visitors can experience both indoor exhibits and a natural setting.

A bare bones staff does not have the time to develop additional sources of funding, a membership program, or a cadre of volunteers—all of which would help in the long term.

The Namibia Animal Rehabilitation, Research, and Education Centre (NARREC) sees public education as vital in order to ensure the long-term security of wildlife and habitat. Like many centers, however, it operates with minimal staff, and donations barely keep up with expenses. A bare bones staff does not have the time to develop additional sources of funding, a membership program, or a cadre of volunteers—all of which would help in the long term.

In Uganda, the African Wildlife Foundation operates an interpretative center and camping facility in connection with Lake Mburo National Park. Its stated purpose is to conserve natural resources and biodiversity of the park by making it relevant to local economic and educational needs. This site is somewhat unique among those sponsored by NGOs for the Uganda National Parks, because park structures and programs fully employ education and communication approaches. A technical advisor works with park employees, who in turn conduct all education and outreach activities with surrounding communities. Queen Elizabeth Park also has a small museum that accommodates local school groups. When school groups visit, park staff encourage them to form wildlife clubs so that students (and parents) remain interested in conservation.

An interpretative center at Madagascar's Ranomafana Park features exhibits for visitors to view before engaging in the full park experience. Groups of local school children use these facilities, as do tourists and scientists. Besides the still-life exhibits, the center has a large tank with live fish from park

streams. WWF operates an urban interpretative center within the Botanic Gardens in Antananarivo. This center illustrates some of the opportunities and challenges of operating a heavily used site with insufficient resources. Two motivated and creative educators run a two-room center that receives approximately 11,500 visitors a year—all during school hours. The staff makes a special effort to interact with the students. However, time and space do not permit them to conduct much environmental interpretation alongside the exhibits or in the surrounding zoological gardens.

Summary of Nonformal EE&C Interventions in Africa

- ❖ **Education programs designed for adult and out-of-school youth should more fully include environmental topics, particularly since almost all these audiences engage in work or live in a way that directly affects the environment.**
- ❖ **Extension workers need pre-service or in-service training so they can adequately fulfill their new responsibilities requiring more collaboration and communication.**
- ❖ **Interpretative centers can tap into visitors' interests through interactive displays and first-hand nature experiences, yet often do not have the staff, space, or other resources to adequately meet visitor needs.**

"Given pressure to survive, environmental education is key. EE means life education."
Ugandan educator

5. EE&C through Informal Settings: Untapped Opportunity

- ❖ *Communication Campaigns*
- ❖ *Folk Media*
- ❖ *Community Mobilization*
- ❖ *Summary*

Informal EE&C interventions, conducted outside of the context of formal institutions or organized groups, differ not only by the channel they employ, but also in their process and strategy. Communication campaigns using mass media channels are perhaps the most familiar examples. They may attempt to reach general populations or target specific audiences, but typically segment their audiences for best results.

Additional channels for informal EE&C include folk and indigenous media (street theater, community dramas, songs, storytelling, oral history); community mobilization efforts; and electronic media (Internet, interactive media, satellite). All of these efforts are designed to reach people in their everyday lives.

Although used effectively in other sectors—such as health, family planning, and AIDS prevention—assessments in the five countries did not find any social marketing efforts targeted at introducing, modifying, or sustaining specific environmentally benign behaviors. Several Namibians expressed the view that they did not want to participate in a program that they interpreted as “telling people what to do.” If these or other informal-setting interventions are used on a wider basis in the environmental sector, they would have to be accompanied by fuller

explanation of their strengths and weaknesses, when they are appropriate and when not.

Links between a program’s technical and policy activities and its education and communication aspects should be strong, particularly in informal settings. EE&C rarely “stands alone” in these contexts, but tends to promote and support specific policies or accelerate short-term behavior change as part of larger programs. Specific goals of informal EE&C interventions could include changes in voting behavior among policy makers considering a national logging law, changes in dynamite fishing practices among fisherman, changes in garbage disposal habits in a neighborhood of female-headed households, or changes in services and facilities offered by community-based tourism operators.

Little evidence was found of sustained, systematic use of EE&C interventions in informal settings in any of the five African countries studied. Lack of resources, misunderstanding about the role of informal interventions, and limited in-country individual and institutional capacity perhaps account for this gap. However, as described above, informal EE&C strategies can give existing environmental programs new impetus. Investment in capacity building and infrastructure development, or appropriate technical assistance, could produce high

returns.

Communication Campaigns

As noted above, evidence from the five countries suggests programs in Africa have not made full use of mass media or other communication techniques in their environmental protection or conservation initiatives. Isolated environmental awareness campaigns have used various mass media channels, but they have been aimed at disseminating general messages to a large number of undifferentiated groups. Such national, general appeals rarely motivate people to action, but rather attempt to instill a basic appreciation of environmental issues. Most governmental and NGO staff interviewed expected communication campaigns to serve this broad purpose of awareness raising. Indeed, national awareness campaigns *can* lay a useful foundation for future action-oriented programs that address specific environmental issues. However, when funding and other resources are scarce, this approach is expensive and produces low returns in the form of evident, measurable improvements in environmental conditions.

Programs in Africa have not made full use of mass media or other communication techniques in their environmental initiatives.

Systematic communication approaches have been commonly practiced in the health sector for some time (especially in the areas of disease prevention, nutrition education, and family planning) and have proven effective in changing targeted behaviors. These models

are characterized by intensive formative research; audience segmentation; programs formulated on the basis of “costs and benefits” to a target audience; integration of a range of communication channels (especially mass media); and regular monitoring and adjustment of program strategies. Audiences are generally divided into three types: primary (those whose behavior program planners hope to change); secondary (those who directly influence the practices or thinking of the primary group); and tertiary (those who exert less direct influence, such as policy support).

Evidence shows that effective communication campaigns are based on rapid applied research. Research provides insights into the benefits and barriers an audience perceives in relation to proposed new behaviors. It also provides a means to set specific behavioral indicators, to establish levels of “success” (degrees of particular change), and to ensure feedback among stakeholders, policy makers, and practitioners. While research is important in all EE&C activities, it is vital in behavior change programs carried out in informal settings. Further, communication researchers routinely disaggregate both developmental and final evaluation data by gender, as well as other characteristics, since they recognize that men and women behave differently, with different attitudes, knowledge levels, beliefs, and access to information and other resources. These data can be used to prepare gender-sensitive programs.

Capacity exists in The Gambia to make greater use of communication campaigns to achieve national environmental objectives. The Ministry of Health and the nongovernmental Family Planning Association have solid communication campaign experience and years

of data on what works, for whom, how, and why. Over the years, social science research skills have been developed by the Foundation for Research for Women's Health, and by the government's Women's Bureau. In addition, expertise within the government's Public Information Unit to provide media support has grown. This unit, which services both public- and private-sector clients, runs Radio Gambia, a mobile press and publication section, and an audio-visual unit.

Research provides insights into the benefits and barriers an audience perceives in relation to proposed new behaviors.

The other countries studied have varying degrees of local capacity to develop, implement, and evaluate environmental communication campaigns. Again, existing capacity lies primarily in the health sector. Ability to conduct good social science research and to use mass and interpersonal media also varies widely among these countries. Advertising agencies and market research or public opinion polling firms are scarce. Moreover, the institutional capacities of local radio and video production outlets, color printing facilities, and distribution services is generally low, with a few exceptions.

Plurality of language plays a role, especially in national-level communication campaigns of any kind. Radio Uganda, for example, broadcasts in twenty-two languages. Producing programs in many indigenous languages also adds expense; on the other hand, it provides a more direct channel to a target population.

In Madagascar, a parastatal agency conducts public relations in support of government policies. However, in Madagascar, as elsewhere, opportunities for use of mass media exist on a number of other levels. Community video houses are common neighborhood gathering grounds, where environmental programs could air along with other entertainment. Privately owned radio stations and other mass media are fertile and inexpensive channels to reach audiences. The U.S. Information Agency sponsors a journalists' training program in Madagascar; it does not have an environmental component but could in future sessions. However, other private-sector support structures for communication campaigns, such as research firms, are generally undeveloped.

Namibian media infrastructure has made significant advances since independence. Recently, the Namibian Broadcasting Corporation (NBC) conducted a listener poll, and several other organizations plan a nationwide survey that will not only focus on radio, but also newspaper and magazine preferences and habits.

Guinea's rural radio network is the most timely media channel for reaching beyond the capital of Conakry. Its director is a recognized expert in the field. Programs have dealt with bush fires and other environmental themes. The Swiss government provided early funding for Radio Rural, and USAID/Conakry has also supported the system. More systematic use of radio would be an effective route to communicate environmental messages to the country's large rural population.

In short, communication campaigns can instill more informed thinking about environmental

issues in general terms, but can also assist in short-term crises. For this to happen on a systematic basis in Africa, however, support to build capacity for research, planning, and production is essential, as is wider acceptance by environmental advocates about the appropriate role of communication campaigns in furthering their goals.

Folk and Other Indigenous Media

Communication programs using folk media are more developed with respect to health issues than for environmental messages.

Increasingly, folk and other indigenous dramatic or entertainment media are recognized as valuable and effective informal channels for interventions on social issues. Specific forms of media and their appropriateness to reach different audiences and address different issues vary widely from country to country, and from culture to culture. Most common media found in Africa today, however, are drama, storytelling, dance, and music.

These media can also be used to conduct formative communication research for other purposes, since some deep attitudinal and behavioral issues are difficult to introduce in focus group gatherings or individual interviews. A theatrical or dramatic setting can help depersonalize the subject. For example, in some cultures, women have refused to admit to violence or domestic abuse when questioned during routine qualitative research. But these same women have

developed plays about village life which feature abused wives as key characters.

In the five African countries studied, evidence of the value of folk media is clear. However, communication programs using folk media are more developed with respect to health issues than for environmental messages.

In Uganda, drama has been effectively used in the fight against AIDS. The Ministries of Health and Education have worked through the School Health and Education Project to teach dramatists about AIDS and HIV infection. In turn, drama groups write and stage plays that touch on these themes. Training in environmental issues is not as well developed, but several groups, such as World Vision, use drama and music in their environmental programs. The well-known Bakayimbira Dramactors, a self-sustaining drama company that has performed for Uganda's President, has expressed interest in writing and producing plays about the environment.

In The Gambia, drama groups have helped the Health Education Unit deliver health-related messages. Both a capacity and willingness to convey environmental messages is present, but dramatists and other performing artists need training in how to understand, translate, and incorporate environmental topics into their work.

Community Mobilization Approaches and Participatory Methods

Participatory approaches are increasingly found in the EE&C toolbox. These methods equip communities with the decision-making, problem-solving, and implementation skills

necessary to manage their own natural resources. An ecosystem approach—which integrates economic and ecological concerns—can teach communication, organizational and program-planning skills. Community mobilization may also introduce or build upon existing democratic approaches in some communities. Outcome responsibility transfers to the community, encouraging members to examine, monitor, and regulate their own behaviors. A technical adviser can often assist in developing these skills and facilitating participation.

It has become a development truism that without participation at an early stage,

The objective of these methods is to equip communities with the decision-making, problem-solving, and implementation skills necessary to manage their own natural resources.

interventions are less likely to succeed and be sustainable. An external agent cannot have the insights or provide the motivation to change that can come from a community itself. Over a short period, perhaps the life of a project, behavior change may occur—particularly if incentives are offered. But when the incentives are gone and external funding ends, motivation must then come from the community itself. The social processes that cause communities to adjust values and norms must be engaged. Community mobilization approaches tap into local decision-making processes, make evident social patterns and values that an outsider would have difficulty accessing, and are often accompanied by community development activities. Local and

international NGOs often work with community development committees within the borders of a watershed or the boundaries of a national park or protected area.

The Gambian Ministry of Agriculture's Soil and Water Unit effectively organizes its multi-village conservation activities around districts defined by watershed borders. The Chimpanzee Rehabilitation Project works with villages on the periphery of the River Gambia National Park and Action AID concentrates its activity in the Lower River Division. All these groups employ methods that encourage community participation and attempt to assist communities in mobilizing themselves for their own development.

In Namibia, the USAID-sponsored Living in a Finite Environment (LIFE) project embraces an innovative community-based approach to natural resource conservation that relies heavily on participatory methods. Efforts address rangeland, forest, wildlife, and water resources management. First, help is offered to communities in developing local management committees. These committees then introduce their broader communities to self-governance concepts, decision-making and problem-solving skills, and methods of sustainable management and income generation. Counterpart public sector organizations (the Ministry of Agriculture, Water and Rural Development, and the Ministry of Environment and Tourism) also believe their own staff need to learn and employ such participatory methods. LIFE is helping build this capacity within these institutions.

In recent years, Uganda expanded its National Park System from three to ten parks. Work

with communities in the buffer zones of these parks became an important focus for NGO and community collaboration. For example, the Wildlife Conservation Society works with communities in the buffer zone of Kibale Forest National Park to develop ecotourism services and business opportunities that local residents can provide. WWF works in the buffer zone of Rwenzori Mountains National Park with communities to curb threats to the natural resource base resulting from cultivation, hunting, grazing, and fuelwood collection. Community-based Park Management Action Committees (PMACs) coordinate the use of revenues obtained from park admission fees, a portion of which supports community-initiated programs. The Africa Wildlife Foundation's work in the buffer zone of Lake Mburo National Park, CARE's work at Bwindi National Park, and IUCN's (The World Conservation Union) work at Kibale, Semliki, and Mount Elgon are very much like that at Rwenzori, as local governing committees facilitate program planning and revenue sharing.

Madagascar's National Association for the Management of Protected Areas (ANGAP)—a parastatal organization—coordinates Integrated Conservation Development Projects (ICDPs) with the assistance of international NGOs and other organizations, as well as USAID/Antananarivo and other donors. These ICDPs establish protected areas and develop alternative employment arrangements for communities deprived of park access. Dialogues with the respective communities vary in terms of the degree of participatory involvement.

However, ANGAP needs strengthening in such areas as basic program planning, research

formulation, and evaluation skills development. Participatory methods diverge from past top-down approaches, and they take time to learn. At present, each ICDP tends to address its own EE&C needs in a vacuum. Few resources or lessons learned are shared among them. ANGAP could facilitate coordination and thereby increase the efficiency of all.

All five countries would benefit from the types of strengthening described above for ANGAP. Participatory methodologies that equip and empower communities are new to many environmental practitioners. NGOs, the principal channels for this assistance, need training in such important skill areas as formative research, program planning, evaluation techniques, revenue-sharing procedures, ways of mobilizing external support for selected initiatives, and facilitation of community decision making, problem solving, and conflict resolution.

Summary of Informal EE&C Interventions in Africa

- ❖ **Communication campaigns can help change specific behaviors of target audiences around environmental topics, particularly in the short term. For this to happen on a systematic basis in Africa, however, support to build capacity for research, planning, and production is essential, as is wider acceptance by environmental advocates about the appropriateness of communication campaigns in furthering their goals.**
- ❖ **Both a capacity and willingness to convey environmental messages through folk and indigenous media are present, but dramatists and others need training in how to incorporate environmental issues into their artistic work.**
- ❖ **Participatory methodologies that equip and empower communities are new to many environmental practitioners. NGO and community leaders, both women and men, need training in the range of skills necessary to make these methodologies work.**

“EE&C means not only discovering or learning a new technique, but also being able to know whether or not it is the right technology for a given environment; how to adapt it; and how to explain to the ‘expert’ why a particular environment cannot support such a technology or technique.”

Assessment author, Guinea

6. Gender and EE&C: Good Intentions, Few Results

- ❖ *Applying a Gender Approach*
- ❖ *Gender Concerns in Formal, Nonformal, and Informal Settings*
- ❖ *Summary*

Applying a Gender Approach

Previous sections of this publication have attempted to integrate gender concerns in discussions of interventions in formal, nonformal, and informal settings in Africa. A few more general considerations about how gender affects EE&C interventions, and how these approaches, in turn, impact the daily lives of women and men and the condition of the environment, warrant further exploration.

Despite heightened awareness of women's contributions to sustainable development, and specifically their roles with respect to the environment, women do not play a leadership role in environmental programs and policies. The development community's use of a "gender and development" (GAD) rather than "women in development" (WID) approach could improve on this. Rather than only trying to initiate specific programs to "help" women, a gender-oriented approach starts from a holistic perspective on social organization and economic and political life. It is not concerned with women *per se* but with the entire social system and the assignment of specific roles and responsibilities to women and men within that system. A gender perspective can lead not only to affirmative action programs, but also to a fundamental reexamination of social structures affecting both sexes.

Few projects in Africa or elsewhere have operationalized gender considerations beyond well-meaning intentions. However, inclusion of such considerations in the design of EE&C components of environmental programs will increase their effectiveness and positive impact on the environment.

Questions are rarely asked about where women go for fuelwood, if they are forbidden to use the resources of a park; or about what happens to family health and income gained from herbal medicine when they cannot harvest non-timber products.

A gender approach encourages environmental practitioners to ask questions about what happens to *all* members of a community when new technologies or policies are introduced. These questions in turn provide more insight into the overall effect of these programs on the environment. For example, conservation programs stressing community participation may hire local men as guards or guides, to reduce farming in a protected area while fulfilling economic needs. But all members of the community and all forms of work must be considered. If men are hired as guides, what *does* in fact become of the land they farmed? (Do women now farm two plots, their own

and their husband's?) What happens to the new household income? (Is the cash used for the sole benefit of the male or for the entire family?) Questions are rarely asked about where women go for fuelwood, if forbidden to use the resources of a park, and how much longer it takes them; about what happens to family health and income gained from herbal medicine when women cannot harvest non-timber forest products; or about what household chore or family member is neglected when women must fetch water or wood from longer distances. In one program in Madagascar, a guide stated clearly that were it not for existing eucalyptus stands outside the park area, women would have been forced to breach park boundaries for fuelwood.

Integrating Gender Concerns in Formal, Nonformal, and Informal Settings

Gender considerations should also be taken into account in school-based interventions in formal settings. For example, Madagascar's proposed secondary-level environmental education curriculum might miss reaching many women/girls who stop attending school after the primary grades. After-school programs, such as clubs, are for all intents and purposes closed to girls who have to return home to help their mothers. Formal programs, therefore, have a particular responsibility to ensure close school-community linkages so that girls can still access important information, particularly since women are often the *de facto* natural resource managers of many households and communities.

Environmental educators need to concern themselves with the general bias in school systems against girls, as documented in

educational research literature. This bias shows itself in the limited number of women teachers, particularly in rural areas; in the unequal approach of male and female teachers alike to girls (for example, not calling on them as often in class); and in the lack of appropriate female role models and images in instructional materials. When training teachers to teach environmental education, EE specialists have a unique opportunity to influence teachers' general behaviors and teaching styles towards girls.

Attention to women's special work and needs, through both informal and nonformal interventions and at both the policy and planning levels, leads to more effective programs. As mentioned earlier, Namibia's successful literacy program, which includes components on the environment, reaches high percentages of women; future analysis of its success in this regard may help other programs. Training of extension workers could place special emphasis on gender sensitivity. As noted earlier, recruitment programs for female extension workers are also needed. Also in a nonformal setting, interpretative sites could include exhibits that depict both women and men as resource users and resource managers, both in current times and historically.

How men and women are depicted in the popular media, too, influence their roles in everyday life.

Ironically, the tendency exists to target some environmental strategies to women simply

because they appear to be willing audience. In several countries, technical experts preferred women as participants in reforestation programs because they were considered more reliable in tree planting and maintenance.

A tacit assumption that men could **not** change their environmental behaviors meant that no efforts were made to include them in community action or in a range of formal, informal, and nonformal interventions.

However, no serious attempt was made to find out the impact of this additional activity on the family. Most importantly, a tacit assumption that men could *not* change their environmental

behaviors meant that no efforts took place to include them in community action or in a range of formal, informal, and nonformal interventions.

Prevailing thought in Madagascar states that since the country was once a matriarchal monarchy, gender issues do not need attention. Malagasy social and anthropological researchers dispute this vigorously. Related misconceptions persist in all five countries studied, and need to be addressed. Conducting qualitative research during project design, and asking gender-sensitive questions throughout the program process, will help uncover some of these issues. At this point in time, true integration of gender considerations was not evidenced in the programs studied.

Summary

- ❖ **A gender approach focuses on roles and responsibilities of both men and women and looks at the entire social system. This approach could benefit both the environment and people's lives.**
- ❖ **Despite good intentions, few environmental or EE&C projects operationalize gender concerns in a meaningful manner.**
- ❖ **Conducting qualitative research during project design, and asking gender-sensitive questions throughout the program process, will help integrate gender concerns.**

“Gender disparities are significant, particularly in decision making, ownership of resources, access to information, and impact of natural resources degradation.”

Malagasy social scientist

7. Conclusions and Recommendations

Environmental education and communication programs will not solve Africa's environmental problems in a vacuum. They must be integrated with environmentally positive technologies and practices and with appropriate policies, as must happen throughout the world. Well-planned, comprehensive EE&C programs offer the potential to help people change their behaviors to ensure sustainable ecosystems for Africa's future generations.

In summary, assessments of EE&C interventions in The Gambia, Guinea, Madagascar, Namibia, and Uganda resulted in the following conclusions and recommendations for future attention:

One: Breadth of EE&C

Conclusion: Across Africa, both individuals and institutions of all kinds are carrying out creative EE&C initiatives. However, the five assessments revealed a general lack of understanding about the breadth and depth necessary for more effective interventions, and little coordination among various actors.

Recommendations:

- ❖ Depending on target audience, resources, and goals, develop EE&C interventions in nonformal and informal settings, not just in formal (school) situations.

- ❖ Provide in-depth training in EE&C planning and strategies to practitioners and more general sensitization about EE&C's potential to policy makers, program designers and managers.
- ❖ Strengthen existing networks, and facilitate new ones where needed, to coordinate efforts, share lessons learned, and avoid duplication.

Two: Depth of EE&C

Conclusion: In most cases, EE&C interventions in Africa consist of an "implementation" phase only, rather than a more comprehensive approach that also encompasses applied research, pretesting, and monitoring and evaluation.

Recommendations:

- ❖ Improve EE&C interventions by incorporating formative research, pretesting, monitoring, and evaluation to support implementation efforts.
- ❖ Build in-country capacity in these critical areas through funding support and guided practice.

Three: Policy

Conclusion: Each of the five countries studied has formulated a National Environmental Action Plan that recognizes a

role for environmental education and communication. Although important, these policies on paper are not enough for effective EE&C strategies to have meaningful or sustainable impacts on the livelihoods of millions of Africans.

Recommendations:

- ❖ Translate policy into national will. Make EE&C approaches a priority in environmental programs through such means as development of EE&C strategies that involve top levels of government, provision of sufficient funding, and capacity building.
- ❖ Develop a common vision through public meetings, media programs, and printed materials to engage people in debate and discussion that links EE&C in all settings to national development priorities.

Four: Materials Development and Dissemination

Conclusion: EE&C materials do not always make their way to their intended audiences, nor are they always targeted to address local messages or conditions. This is prevalent in schools, but extends to other EE&C settings and audiences. Most materials are developed without the benefit of pretesting or evaluation.

Recommendations:

- ❖ Ensure the availability of EE&C materials through resource centers, book rental/sharing schemes, additional funding for materials

acquisition, desktop-publishing systems, and other means.

- ❖ Develop audiovisual materials about *local* problems and *local* solutions.
- ❖ Encourage broader adoption of electronic media to spread information inexpensively.

Five: School-Community Linkages

Conclusion: Extracurricular activities, such as clubs and contests, exist in all five countries. Strong leaders usually make the difference between, for example, a club that exists only on paper and one that engages in meaningful activities.

Recommendations:

- ❖ Encourage extracurricular and classroom activities through leadership development and private-sector cooperation.
- ❖ Train teachers, youth leaders, and administrators to find ways to increase school-home and school-community linkages through environmental action and other community projects. This will also result in increasing parents' perceptions of the relevancy of their children's schooling.
- ❖ Develop extracurricular activities with schedules and other considerations that will allow girls to become and, more importantly, stay involved.

Six: Out-of-School Youth

Conclusion: Out-of-school African youth are an under served, growing population and a key audience for future EE&C programs. A large percentage of them are young women.

Recommendations:

- ❖ Infuse relevant environmental topics in existing and future continuing education for adults and especially out-of-school youth, including programs that women and girls can regularly access.
- ❖ Employ out-of-school, unemployed or underemployed youth in “conservation corps,” or other action projects which will benefit the environment, increase their knowledge of environmental issues, and channel their energies into meaningful activity.

Seven: Extension

Conclusion: Public- and private-sector extension systems exist throughout Africa. Their missions and methods of operation have changed greatly over the past few years, but not enough has been done to train extension workers in developing and communicating EE&C messages.

Recommendations:

- ❖ Improve extension systems through pre-service and inservice training for field agents in communication and community development skills.

- ❖ Establish better coordination among extension agencies at central, regional, and field levels.
- ❖ Provide funding for models that allow for greater participation by female extension workers and resource users.

Eight: Site-based Interpretation

Conclusion: Site-based environmental interpretative centers have a related, but different mandate than other EE&C interventions in Africa, with great potential to engage local, national, and international visitors and impart important environmental messages.

Recommendations:

- ❖ Strengthen capacity of site-based interpretation to deal more effectively with local residents, school groups, and foreign visitors.
- ❖ Train teachers and extension workers to use easily accessible sites to explore environmental issues—such as the local market to learn about solid waste management or a stream to discuss water quality.

Nine: Informal EE&C

Conclusion: Environmental educators and communicators are doing little in informal settings, especially in communication campaigns or through folk and indigenous media. Community mobilization and participatory methodologies are becoming

more common in all five countries, although

implemented to varying degrees.

Recommendations:

- ❖ Learn from experience gained in the health and other sectors by adapting systematic interventions to change specific, targeted behaviors.
- ❖ Train dramatists, local writers, oral historians, and other performing artists in environmental issues.
- ❖ Strengthen local NGOs in such skills as EE&C program planning, evaluation, revenue-sharing techniques, facilitation, and conflict resolution.

Ten: Gender

Conclusion: Despite good intentions, few environmental or other EE&C projects operationalize gender concerns in a meaningful manner.

Recommendations:

- ❖ Conduct qualitative research during project design. Ask gender-specific questions throughout the program process—and heed the responses—to integrate gender concerns in EE&C programs and projects.
- ❖ Analyze ongoing projects with gender concerns in mind. Adjust programs, priorities, and staffing as needed.

***“This is not an easy job. It is very important
to take a long-range view.”***

Ugandan NGO representative

Annex A: Guidelines for Assessing an EE&C Intervention

Program managers often need to assess the environmental education and communication (EE&C) components of their environmental programs. Complete assessments of EE&C interventions consist of more than just acknowledging the development of a product or existence of a program. Content, quality, breadth, and depth, among other factors, determine whether interventions have achieved their goals.

The purpose of this annex is to provide program managers with simple guidelines to help them review, inventory, and assess their programs. It includes a series of questions to ask about specific activities. Answers to these questions can inform managers about the strengths and weaknesses of EE&C interventions. The answers can also help managers identify gaps that need to be addressed, as well as successes on which to build additional education and communication programs to achieve specific environmental objectives.

Two types of interventions carried out within formal settings illustrate this approach: **in-school curricula** and **pre-service teacher training**. Assessing EE&C activities is primarily a review of the program planning, implementation and monitoring and evaluation stages of any program or project. Thus, each category includes questions about planning and research processes used to develop programs; mechanisms by which programs are implemented; and procedures by which they are monitored, evaluated, and revised. Similar questions can be formulated for other types of interventions in nonformal and informal settings.

Questions like these illustrate not only the many aspects of EE&C interventions, but also the way in which they can be dissected for analysis. At times, responses will not be available for all these questions. In other circumstances, different questions will have more relevance. With limited means available for EE&C programs, the bottom line is that a critical examination of EE&C interventions will result in better targeting of financial and human resources.

This is a working document. GreenCOM staff welcomes feedback so that the next version can reflect additional field perspectives.

In-school Curricula

General questions:

Does the country have a required national environmental education curriculum under the auspices of the Ministry of Education or other governmental entity?

Have pilot or demonstration curricula been designed for use in a limited area?

For each curriculum:

A. Planning and Research

1. What is the breadth and depth of the content of the curriculum? What environmental topics does it cover? Has it been adapted to national and/or local environmental contexts, issues, and topics? In what languages is it written? Is it coordinated with national environmental policies?
2. Is it a separate “block” curriculum? Or it infused with other curriculum topics? If so, which topics (math, science, social studies, health)? Is it supplemental or mandatory?
3. How was the curriculum developed? Was a participatory process used? Who participated (head teachers, teachers, students, parents, environmental educators)? Was research conducted? In what form (qualitative or quantitative knowledge; attitude, belief and practices surveys) and with whom (teachers, students, environmental specialists, others)?
4. Was the curriculum pretested? If so, how? By whom? Was the curriculum revised on the basis of these results?
5. Which grade level(s) is the target audience? What percentage of the school-age population, boys and girls, attends school at this grade level? Is the curriculum intended for national or regional use?
6. Which agencies and institutions (governmental and nongovernmental, local and international) supported or are available to support curriculum development? What is the extent of the support?
7. What materials were developed for the curriculum? For whom (principals, teachers, students, parents, the community)? In what form (syllabus, teacher guidebooks, textbooks, student activity books, reference books, videos or other audiovisual material)?

B. Implementation

1. How long has the curriculum been implemented?
2. How widely has the curriculum actually been distributed (by grade level, region,

gender, urban/rural area, public/private school)?

3. Are materials available to those who are supposed to be using them?
4. How are teachers and schools tailoring the curriculum to fit their particular communities, regions, or immediate environmental issues?
5. During what subject(s) are environmental topics or components actually being taught (e.g. science, agriculture, language arts)?
6. Do students receive grades or are they otherwise tested on the curriculum?
7. Do teachers have access to resource centers or other support systems? If so, who operates these centers? When are they open? Where are they located? Which teachers have access?
8. Which agencies and institutions (governmental and nongovernmental, local and international) are supporting the implementation of the curriculum and the production of supporting materials?
9. Are the formal curricular programs linked to each other? To other EE&C activities in the community?
10. Does the curriculum address the different learning needs of boys and girls?

C. Monitoring and Evaluation

1. Is curriculum implementation being monitored? If so, what is being monitored and how frequently?
2. Has any evaluation been conducted to determine curriculum impact? If so, in what form (qualitative or quantitative) and with what objectives (knowledge, attitudes, beliefs, practices, impact on the environment)? With whom (students, teachers, parents, the community)?
3. Who receives and reviews monitoring and evaluation results? Is there evidence that the curriculum and/or its implementation has been or will be revised on the basis of the monitoring and evaluation results?

Pre-service Training Programs

General questions:

Are pre-service training programs or activities provided to all teachers within the formal education system? If so, how does this training cover environmental topics and/or the environmental component of the curriculum?

Is special or more in-depth training provided to teachers implementing pilot or demonstration environmental curricula?

For each pre-service training program:

A. Planning and Research

1. What is the breadth and depth of the training? How long is it? Does it cover a full range of relevant environmental topics?
2. How was the training developed? Were participatory processes used? If so, who participated? Was research used as a basis for designing the training? If so, with whom (teachers, head teachers, principals, environmental specialists) and in what form (qualitative, quantitative)?
3. Was the training program pretested? If so, in what form and by whom? Was the training revised on the basis of these results?
4. How does the training relate to the curriculum that the teacher will be teaching?
5. Where and when is the training offered? Is there equal access to the training by male and female pre-service teachers? By urban and rural teachers? By public/private school teachers?
6. Does the training provide guidance on preparing lesson plans that address the different learning needs of boys and girls?

B. Implementation

1. Which agencies and institutions offer and/or support pre-service training?
2. Who conducts pre-service teacher training? What is their background and training in education? In the environment? In the curriculum being implemented?

3. Is the pre-service training elective or is it required? If required, for whom?
4. What form of incentives and/or support are available to teachers to ensure their participation in pre-service training activities?
5. How many teachers have completed the pre-service training? What proportion of those implementing the curriculum does this represent?
6. Who is receiving the pre-service training (by gender, region, urban/rural, grade level)?
7. Are staff other than teachers receiving the training?
8. What kinds of support are available in the field and after the training to help the teacher implement what he or she has learned?

C. Monitoring and Evaluation

1. Is pre-service training monitored? If so, what is being monitored (number of training sessions, number and characteristics of teachers being trained) and how frequently?
2. Has any evaluation been conducted to determine the impact of the pre-service training? If so, what type of data is collected (qualitative or quantitative)? When (immediately after training, delayed follow-up)? What is evaluated (knowledge, attitudes, beliefs, skills)? On whom?
3. Who receives and reviews the monitoring and evaluation results? Is there evidence that the pre-service training has been or will be revised on the basis of the monitoring and evaluation results?

Annex B: References Cited

- Allen, I. *Organizations and Resources for Environmental Education in The Gambia*. Washington, DC: Academy for Educational Development (AED), 1994.
- Allen, I. "GreenCOM Project: Lessons Learned in Environmental Education and Communication from Five Country Studies." Paper presented at NGO Women's Forum. Dakar, Senegal: 1994.
- Braus, J. and D. Wood, *Environmental Education That Works*. Troy, Ohio: North American Association for Environmental Education, 1994.
- Disinger, J. and M. Monroe. *Defining Environmental Education*. Ann Arbor: University of Michigan, 1994.
- Falloux, F., L. Talbot, and J. Larson. *Progress and Next Steps for National Environmental Action Plans in Africa*. Washington, DC: World Bank, 1991.
- Field, R.T. *Environmental Education and Communications in Uganda: Organizations and Resources*. Washington, DC: AED, 1994.
- Grieser, R. *Environmental Education and Communication (EE&C) Assessment for Madagascar*. Washington, DC: AED, 1994.
- Ham, S. *Environmental Interpretation: A Practical Guide for People with Big Ideas and Small Budgets*. Golden, CO: North American Press, 1992.
- Heimlich, J. "Nonformal Environmental Education: Toward a Working Definition." Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education, undated.
- Maubrey, R. *Environmental Education and Communication Inventory in Guinea*. Washington, DC: AED, 1994.
- Monroe, M. *Environmental Education and Communication Inventory for Namibia*. Washington, DC, AED, 1994.

Picard, M. "A Guide to the Gender Dimension of Environment and Natural Resource Management: Based On A Sample Review of USAID NRMS Projects in Africa." Washington, DC: USAID/AFWID, 1994.

Rathgeber, E. "WID, WAD, GAD: Trends in Research and Practice." Paper presented at Canadian Research Institute for the Advancement of Women. Quebec City: 1988

Staal, S.N. "Women and Their Role in the Agriculture and Natural Resource Sector in The Gambia." Washington, DC: USAID/WID, 1991.

Tyson, B. "Regional Issues in Environmental Education," *Southern African Journal of Environmental Education*, 1994.

Unesco. Environmental Education in Light of the Tblisi Conference. Paris: Unesco, 1980.

(Bibliographies of primary documents from the five countries are included in the individual assessments.)